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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/734,758

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Keith D. Weiss

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EXAMINER

FERGUSON, MARISSA L

ART UNIT

PAPER NUMBER

2854

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/734,758	Applicant(s) BEAUDION ET AL.	
	Examiner Marissa L. Ferguson	Art Unit 2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-22 and 24-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-22 and 24-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122).

Regarding claims 11,12 and 15, Edsberg et al. teaches a plastic substrate (10) used with a material having thixotropic properties (Column 4, Lines 8-10 and lines 63-68). Edsberg et al. does not explicitly disclose a thixotropic ink printed on a substrate and having a thixotropic network magnitude of between 3×10^{-4} and 6×10^{-5} dynes/cm² - sec⁻¹, a thixotropic network strength of at least 35.0 gm-cm and thixotropic creep viscosity of between 8×10^2 to 9×10^4 poise and a tan ratio of at least 1. Redfield teaches using screen-printing to print an ink with thixotropic properties (Column 14, Lines 60-67) on a substrate (3). However, Redfield does not teach a thixotropic network magnitude of between 3×10^{-4} and 6×10^{-5} dynes/cm² - sec⁻¹, a thixotropic network strength of at least 35.0 gm-cm and thixotropic creep viscosity of between 8×10^2 to 9×10^4 poise and a tan ratio of at least 1.

It is common knowledge that thixotropic inks have the claimed qualities such as strength, magnitude and creep viscosity to form a strong-based ink to hold a predetermined shape as disclosed by Edsberg (Column 4, Lines 8-10). Also, it has been held that where general conditions of a claim are disclosed in the prior art,

Aller, 105 USPQ 233. It would have been obvious to provide the claimed ranges since such a modification would result in an ink having a strong semisolid state so that the ink can maintain a stable viscosity over a prolong storage time period.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention as taught by Edsberg et al. to include an ink with thixotropic properties as taught by Redfield, since Redfield teaches that it is advantageous to properly transfer a desired image with optimal performance qualities.

Regarding claim 13, Edsberg et al. teaches a plastic substrate including at least one of the following: a polycarbonate, an acrylonitrile-butadiene-styrene copolymer (ABS), a thermoplastic polyolefin (TPO), a nylon, a phenolic, a polyester, a polyurethane, or polyvinyl chloride (Column 3, Lines 9-32).

Regarding claim 14, Edsberg et al. teaches an ink comprising a hydrocarbon solvent having a predetermined evaporation rate (Column 3, Lines 30-32), a synthetic polymeric resin (Column 4, Lines 41-56) and a thixotrope for forming the thixotropic network in the ink (Column 4, Lines 8-10 and lines 63-68).

Regarding claim 16, Edsberg et al. teaches a polymeric resin including at least one of the following: a polycarbonate resin, a PVC resin, a polyester resin, an acrylic resin, a vinyl resin, a cellulosic resin, an alkyd resin, a formaldehyde derived resin, an epoxy resin, a polyurethane resin, a silicone resin, a silicate resin, an amino resin, a polyamide resin, a phenolic resin (Column 4, Lines 27-29 and Lines 41-56).

2. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122) as applied to claims 11-16 above, and further in view of Mori et al. (JP 58-102944).

Edsberg et al. in view of Redfield teaches the claimed invention, however he does not explicitly disclose a hydrocarbon solvent including at least one of the following: an aliphatic hydrocarbon, an aromatic hydrocarbon, a naphthenic hydrocarbon, a chlorinated hydrocarbon, a terpene solvent, an oxygenated solvent, ketones, an ester, a glycol ether, an alcohol, an acetate, a nitroparaffin, a furan solvent. Mori et al. teaches a plastic film with a hydrocarbon solvent (Constitution). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include a hydrocarbon solvent as taught by Mori et al., since Mori et al. improves the characteristics of an image at a high humidity.

3. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122) as applied to claims 11-16 above, and further in view of Stecker (US Publication 2001/0011783).

Edsberg et al. in view of Redfield teaches the invention claimed, however he does not explicitly disclose a thixotrope including at least one of the following: a castor oil derivative, a high density polyolefin, an attapulgite, a montmorillonite, a fumed silica, a fibrated mineral, a calcium sulphonate derivative, a polyamide resin, polyester amide, an alkyds, an oil-modified alkyd, an ionic surfactant agent, or a non-ionic agent. Stecker teaches a decorative article with thixotropic agents comprising fumed silica (Page 6, Paragraph 0068). It would have been obvious at the time the invention was made to a

person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include a thixotrope including a fumed silica as taught by Stecker, since Stecker provides thixotropic agents in order to maintain a filler and other additives in suspension while curing a resin.

4. Claims 19 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122) as applied to claims 11-16 above, further in view of Rosner (US Patent 4,474,110) and Ishikawa (US Publication 2003/02348848).

Edsberg et al. in view of Redfield teaches the invention claimed including a pigment, however he does not explicitly disclose a pigment dispersed in the ink for opacity or color, an additive to disperse the pigment, the additive including a surfactant, a dispersant, or mixtures thereof and a catalyst to initiate cross-linking between polymer chains in the resin. Rosner teaches a printing process that discloses a pigment dispersed in an ink providing high intensity color (Column 3, Lines 35-43) and a surfactant additive (Column 5, Lines 28-47). However, he does not teach an image-forming device that discloses an ink that has the property of cross-linking by a catalyst. Ishikawa teaches an image-forming device that discloses an ink that has the property of cross-linking by a catalyst (Paragraph 00162).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include a pigment as taught by Rosner, since Rosner teaches that is advantageous to provide a pigment for higher color intensity and to include a catalyst as taught by Ishikawa, since

Ishikawa teaches that it is advantageous to provide a catalyst to provide excellent character qualities.

Regarding claim 20, Edsberg et al. teaches a pigment including at least one of the following: alumina, silica, titanium dioxide, magnesium silicate, barium sulfate, calcium carbonate, aluminum silicate, calcium silicate, aluminum potassium silicate, metallic flakes, yellow iron oxide, chromium green oxide, pearlescent pigments, molybdate orange, cadmium orange, furnace black, channel black, and lamp black, copper phthalocyanine blue, dioxazine violet, quinacridone magenta, azo diarylide yellow, perylene red, Indathone Orange blue, carbazole violet, isoindoline yellow, or pyrazolone (Column 8, Lines 32-34).

5. Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122), Rosner (US Patent 4,474,110) and Ishikawa (US Publication 2003/0224149) as applied to claims 19 and 20, and further in view of Takada (US Publication 2003/0224149).

Edsberg et al., Redfield, Rosner and Ishikawa teaches the invention claimed, however he does not explicitly disclose a surfactant including at least one of the following: a metallic soap, a sulfonate, a phosphate ester, a fatty acid ester, a fluoroaliphatic polymeric ester, a titanate coupling agent, a ziconate coupling agent, an aluminate coupling agent, an organomodified polysiloxane, a block copolymers of poly(alkylene oxide), Hyperme®, Solsperse®, a hyperdispersants, a base neutralized fatty alcohol sulfate, a polyamino-amide phosphate, or carboxylic acid or a catalyst

including at least one of the following: an isocyanate, a metal drier, an acid, a base, or a peroxide. Takada teaches an image-recording medium that teaches a salt base surfactant and a base catalyst (Page 3, Paragraph 0038).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include a surfactant and a base catalyst as taught by Takada, since Takada teaches that it is advantageous to provide a surfactant and a catalyst in order to effectively improve a printed image by providing fast drying properties.

6. Claims 24-27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122) further in view of Cutcher (US Publication 2003/0116047).

Regarding claims 24-27, Edsberg et al. in view of Redfield teaches the claimed invention with the exception of an ink having a thixotropic network magnitude of between 3×10^{-4} and 6×10^5 dynes/cm²-sec⁻¹, a thixotropic network strength of at least 35.0 gm-cm and thixotropic creep viscosity of between 8×10^2 to 9×10^4 poise and a tan ratio of at least 1 and a method of applying a printed decoration through a screen to a membrane, forming the membrane to the geometry of the surface of an article, pressing the membrane and the article together in forced contact and maintaining pressure between the membrane and the article to transfer the membrane image from the membrane to the article. Cutcher teaches applying a printed decoration through a screen to a membrane, forming the membrane to the geometry of the surface of an article, pressing the membrane and the article together in forced contact and

maintaining pressure between the membrane and the article to transfer the membrane image from the membrane to the article (Page 1, Paragraphs 0015- Page 2, Paragraph 0018).

In regards to a thixotropic network, it is common knowledge that thixotropic inks have the claimed qualities such as strength, magnitude and creep viscosity to form a strong-based ink to hold a predetermined shape as disclosed by Edsberg (Column 4, Lines 8-10). Also, it has been held that where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to provide the claimed ranges since such a modification would result in an ink having a strong semisolid state so that the ink can maintain a stable viscosity over a prolonged storage time period.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include applying, forming and pressing a membrane as taught by Cutcher, since Cutcher teaches that it is advantageous to provide a method that properly transfers an image on a membrane with a complementary shape.

Regarding claim 30, Edsberg et al. teaches a polymeric resin including at least one of the following: a polycarbonate resin, a PVC resin, a polyester resin, an acrylic resin, a vinyl resin, a cellulosic resin, an alkyd resin, a formaldehyde derived resin, an epoxy resin, a polyurethane resin, a silicone resin, a silicate resin, an amino resin, a polyamide resin, a phenolic resin (Column 4, Lines 27-29 and Lines 41-56).

7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122) and Cutcher (US Publication 2003/0116047) as applied to claims 24-27 and 30 above, and further in view of Mori et al. (JP 58-102944).

Edsberg et al., Redfield and Cutcher teaches the claimed invention with the exception of a hydrocarbon solvent including at least one of the following: an aliphatic hydrocarbon, an aromatic hydrocarbon, a naphthenic hydrocarbon, a chlorinated hydrocarbon, a terpene solvent, an oxygenated solvent, ketones, an ester, a glycol ether, an alcohol, an acetate, a nitroparaffin, a furan solvent. Mori et al. teaches a plastic film with a hydrocarbon solvent (Constitution). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include a hydrocarbon solvent as taught by Mori et al., since Mori et al. improves the characteristics of an image at a high humidity.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122) and Cutcher (US Publication 2003/0116047) as applied to claims 24-27 and 30 above, and further in view of Stecker (US Publication 2001/0011783).

Edsberg et al., Redfield and Cutcher teaches the claimed invention with the exception of a thixotrope including at least one of the following: a castor oil derivative, a high density polyolefin, an attapulgite, a montmorillonite, a fumed silica, a fibrated mineral, a calcium sulphonate derivative, a polyamide resin, polyester amide, an alkyds,

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an oil-modified alkyd, an ionic surfactant agent, or a non-ionic agent. Stecker teaches a decorative article with thixotropic agents comprising fumed silica (Page 6, Paragraph 0068). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include a thixotrope including a fumed silica as taught by Stecker, since Stecker provides thixotropic agents in order to maintain a filler and other additives in suspension while curing a resin.

9. Claims 31 and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122) and Cutcher (US Publication 2003/0116047) as applied to claims 24-27 and 30 above, further in view of Rosner (US Patent 4,474,110) and Ishikawa (US Publication 2003/02348848).

Edsberg et al., Redfield and Cutcher teaches the claimed invention with the exception of a pigment dispersed in the ink for opacity or color, an additive to disperse the pigment, the additive including a surfactant, a dispersant, or mixtures thereof and a catalyst to initiate cross-linking between polymer chains in the resin. Rosner teaches a printing process that discloses a pigment dispersed in an ink providing high intensity color (Column 3, Lines 35-43) and a surfactant additive (Column 5, Lines 28-47 cross-linking. Ishikawa teaches an image-forming device that discloses an ink that has the property of cross-linking by a catalyst (Paragraph 00162).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include

a pigment as taught by Rosner, since Rosner teaches that is advantageous to provide a pigment for higher color intensity and to include a catalyst as taught by Ishikawa, since Ishikawa teaches that it is advantageous to provide a catalyst to provide excellent character qualities.

10. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edsberg et al. (US Patent 3,589,289) in view of Redfield (US Patent 4,531,122), Cutcher (US Publication 2003/0116047), Rosner (US Patent 4,474,110) and Ishikawa (US Publication 2003/0224149) as applied to claims 31-32 above, further in view of Takada (US Publication 2003/0224149).

Edsberg et al., Redfield, Cutcher, Rosner and Ishikawa teaches the invention claimed, however he does not explicitly disclose a surfactant including at least one of the following: a metallic soap, a sulfonate, a phosphate ester, a fatty acid ester, a fluoroaliphatic polymeric ester, a titanate coupling agent, a ziconate coupling agent, an aluminate coupling agent, an organomodified polysiloxane, a block copolymers of poly(alkylene oxide), Hyperme®, Solsperse®, a hyperdispersants, a base neutralized fatty alcohol sulfate, a polyamino-amide phosphate, or carboxylic acid or a catalyst including at least one of the following: an isocyanate, a metal drier, an acid, a base, or a peroxide. Takada teaches an image-recording medium that teaches a salt base surfactant and a base catalyst (Page 3, Paragraph 0038).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention taught by Edsberg et al. to include a surfactant and a base catalyst as taught by Takada, since Takada teaches that it is

advantageous to provide a surfactant and a catalyst in order to effectively improve a printed image by providing fast drying properties.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marissa L Ferguson whose telephone number is (571) 272-2163. The examiner can normally be reached on (M-T) 6:30am-4:00pm and every other(F) 7:30am-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on (571) 272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marissa L Ferguson
Examiner
Art Unit 2854



Daniel J. Colilla
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